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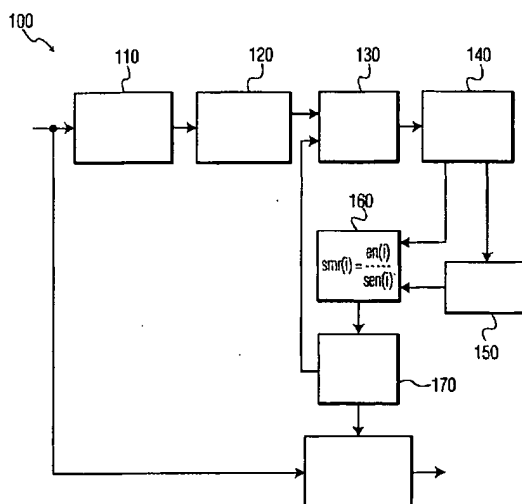
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(54) Title: SYSTEMS AND METHODS FOR AUTOMATICALLY EQUALIZING AUDIO SIGNALS



(57) Abstract: A system and method for automatically equalizing audio signals uses an energy calculation unit (140) to calculate spectral energy values for a plurality of frequency bands based on equalized frequency components. A spreading unit (150) then determines spreaded energy values for each frequency band based on the measured spectral energy values and a spreading function, where the spreading function defines the spread of spectral energy across the frequency bands. An update unit (160, 170) then updates equalizer settings for each frequency band by taking a previous (or initial) equalizer setting and subtracting a normalized ratio of the measured spectral energy value and the spreaded energy value for that frequency band. In this manner, the accumulation of adjustments to the equalizer settings results in slightly attenuating frequency bands that are clearly audible and slightly amplifying frequency bands that are masked by other frequency bands.



SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM,

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